Exploring LTE: Signaling and Operations - Part I

LTE_128Ad | On-Demand | LTE and VoLTE | Express
Course Duration: 1.5 hours

The Long Term Evolution (LTE) network is designed to deliver services and content to mobile subscribers quickly, efficiently, and with high quality. In order to achieve this goal, the various elements within the network communicate with each other and with the mobile device using well-defined protocols and procedures to accomplish the various tasks and operations required. This self-paced eLearning module is part one of the two-module package. Together, these two modules describe each of the key LTE operations, starting with the mobile's initial access to the system, followed by the steps needed to connect users to their services and content, and continuing with the challenges associated with maintaining the connections as the user moves through the network. The course concludes with a discussion of the mobile's idle mode activities and the low-level operations needed to maintain the radio link.

Intended Audience

This course is intended for a technical audience looking for an in-depth understanding of the important signaling sequences and detailed operations used in a typical LTE network.

Objectives

After completing this course, the student will be able to:

• Describe how a UE accesses the LTE network on initial power-up

• Explain the steps involved in attaching to the network and establishing PDN connections

Course Prerequisites

Exploring LTE: Architecture and Interfaces

Outline

1. RRC Connections
1.1. Acquisition and downlink synch
1.2. PCI and PCI planning
1.3. MIB and SIBs
1.4. RSRP, RSRQ, and SINR
1.5. Cell selection and reselection
1.6. Uplink synchronization
1.7. PRACH configuration
1.8. Preambles and RSIs
1.9. RRC Connection setup

2. Network Attach
2.1. Network Attach signaling

3. PDN Connections
3.1. PDN connectivity
3.2. IP addressing
3.3. GTP tunneling

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